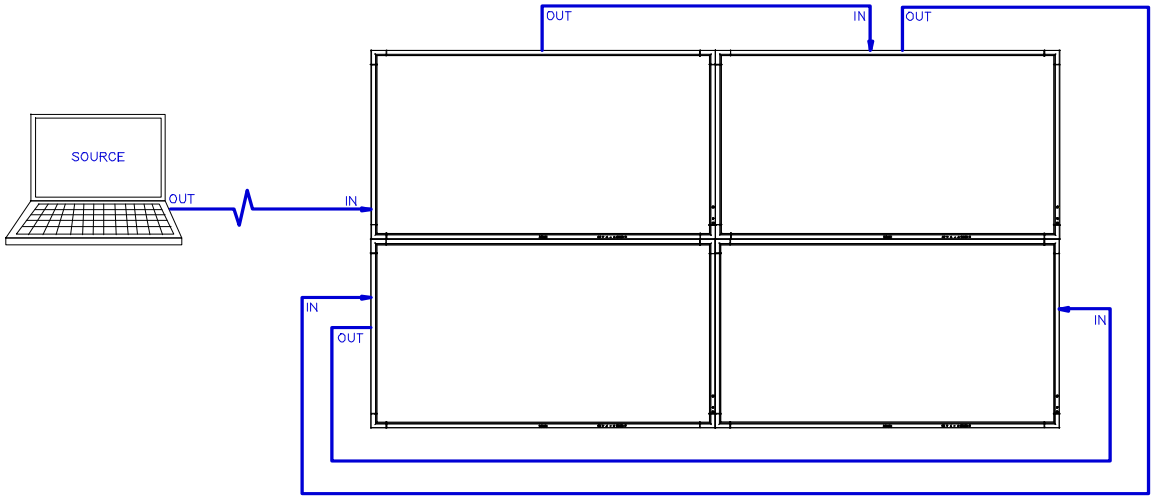
Aspects to consider when constructing NEC video walls

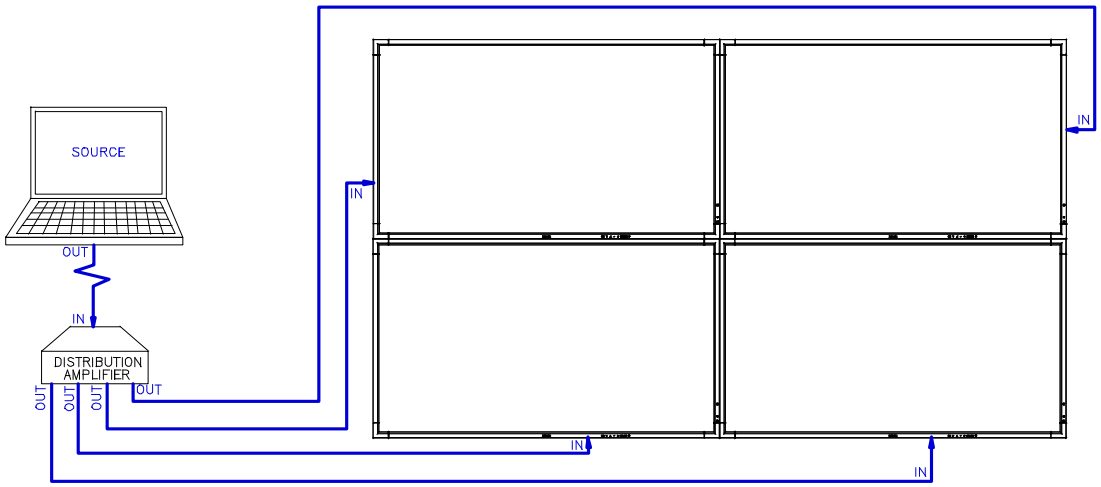
Planning

- **Source**—Determination of how the video wall is going to be used and what's going to drive the wall needs to carefully thought out.
    - What usage is this wall going to be used for? Is a computer going to drive it? A BluRay player? Both at separate times?
- **Signal**—Is this going to be a digital or analog signal? Is there any conversion involved?
- **Wiring**—How will the signal get distributed to the wall?
    - In order to utilize NEC's TileMatrix software, every display needs to be receiving the same signal. It's easiest if this is done utilizing the same source as well.
    - Is this a direct connection or are other factors involved here (extenders, converters, amplifiers, etc)

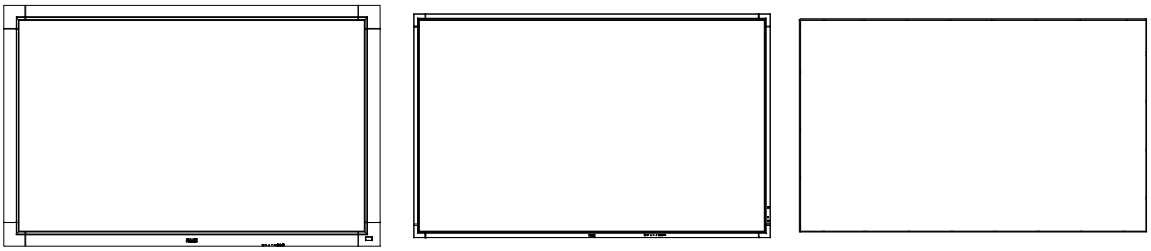
Example of Daisy Chain



Example of Distribution Amplifier



- **Displays**—What displays are ideal for this situation?
    - Higher ambient lighting would cause for higher brightness screens
        - NEC offers both commercial brightness and professional brightness screens depending on what's necessary
    - Are ultra-narrow bezel units necessary?
        - NEC offers displays with active area to active area distances as low as 5.5mm



- **Ventilation/Cooling**—Make sure that the wall is receiving proper ventilation behind the units.
    - All NEC V, P and X series displays have temperature sensors built into the units.
        - There are three sensors total, aligning themselves with 2 internal fans
        - These sensors are used to measure the temperatures within certain hotter parts of the display.
        - Once a sensor hits its 'trip' point, it triggers fans to turn on and stay on until the temperature is under a certain threshold.
    - *As a rule of thumb, if an increase of 10º C is seen when a unit is installed compared to a single stationary unit, extra active cooling needs to be added.*
- **Power—**Make sure that there's enough power planned into the design for all video wall components.

Receiving

- When the units are first received, be sure to notate any boxing damage
    - If damage is present, be sure to take pictures of the shipping damage
- *Always* inspect the units when first receiving them.
    - Note that the mechanical integrity of the product is not compromised.
    - Be sure to plug the product in, make sure the unit turns on
        - Be sure to hit the 'hard power' switch on the back to do this
        - Notate any cracks or scratches on the front glass
    - Take pictures of any damage or defect
- Contact your distributor with any DOA or damaged goods claims to start the MRA processing

Installing

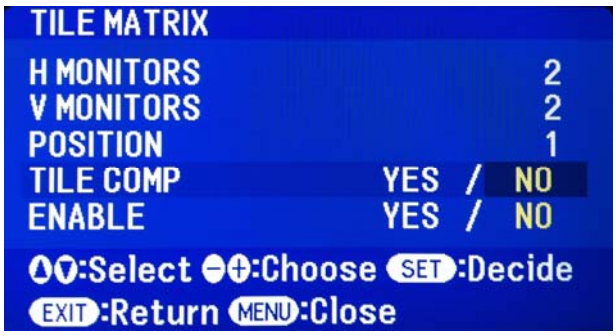
- If this is going on a wall, make sure that it's able to support to support the extra weight associated with the screens and mounts.
    - Building engineers should be able to help here. It's almost always a good idea to support the wall to hold the extra weight.
- If using an adjustable mounting bracket, it's always a good idea to 'zero' out the adjustment range before installing individual monitors
    - This makes fine-tuning and adjustment easier when the displays start going up

- Be sure to have at least two people per screen when mounting them on the wall or stand
    - NEC displays have support handles that are built specifically for the handling of these fragile units. Be sure to utilize the support handles when carrying the product.
    - *Do not grip or carry the display directly by the bezel, this can cause unnecessary strain on the edges of the panel itself and could possibly crack the glass*

- If it's necessary to set the product down, do so in the 'face-up' position on a cleared, padded surface.
    - *Never set any of the Ultra-Narrow bezel screens on their sides or on their corners, this could damage the structure of the panel.*
- NEC recommends that a business card is able to slip between all displays on all sides during the installation process.
    - Due to thermal expansion, screens can slightly expand. Allowing extra space initially will help in avoiding unnecessary strain on the bezel.

TileMatrix Setup

- Each NEC V, P and X series screen has TileMatrix technology built into each screen. In order to utilize TileMatrix, each screen needs to receive the same signal.
    - TileMatrix will allow a 1080p signal to stretch across the entirety of the wall up to 10 x 10 units



- Navigate the OSD menu to the Multi-DSP tab to setup TileMatrix on each individual screen.

Calibration

- Calibration is key! Using NEC's KT-LFD-CC Display Wall Calibrator kit, color temperatures and brightness intensity of individual screens in the wall are able to match up, giving you uniform colors across the entirety of the wall.
    - Custom white points, intensities, black levels and contrast ratios can be obtained.

Before Calibration → **After Calibration**

- Depending on the runtime and environment with the particular wall, calibration should be done every 6 months or when desired.